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横断山区新植物

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NEW PLANTS FROM THE HENGDUAN MOUNTAINS

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Abstract Two new species of *Impatiens* (Balsaminaceae) and two new species of Compositae from the Hengduan Mountains of China are described and illustrated. They are *I. muliensis*, *I. hengduanensis*, *Aster zayuensis* and *Anaphalis batangensis*.
Key words Impatiens *muliensis*; *I. hengduanensis*; *Aster zayuensis*; *Anaphalis batangensis*

关键词 木里凤仙花;横断山凤仙花;察隅紫菀;巴塘香青

1. 木里凤仙花 新种 图 1

Impatiens muliensis Y. L. Chen, sp. nov.

Habitu *I. notolophae* Maxim. similis, sed a quafloribus 1—2, tenuisissime membranaceis hyalinis; sepalis dorso ad costas alatis; vexillo et lobo basilare alae rubro-purpureomaculato; alarum lobis basilaribus falcatis recurvatis patentibus valde differt.

Herba annua, 30—60 cm alta, glaberrima. Caulis succulentus, erectus, simplex vel rarius superne ramosus, nodis inferioribus dilatatis, radicibus fibrosis numerosis. Folia alterna, inferiora et media petiolata, suprema subsessilia lamina membranacea, ovata vel ovato-lanceolata, 3—7 cm longa, 1.5—3 cm lata, apice breviter caudata, basi cuneata, margine grosse dentata, mucronata, supra intense viridia, subtus pallide, viridia, utrinque glabra, nervis lateralibus 3—5-paribus, arcuatis; petioli tenues, 1.5—3 cm longi. Pedunculi in axillis foliorum superiorum solitarii, foliis multo breviores, saepe 2-flori, rarius uniflori. Pedicelli 5—10 mm longi frutiferi paullo elongati, subter flore unibracteati; bractea viridis ovata, 1.5—2 mm longa, mucronata, recurvata trinervia, persistens. Flores magni, pallide flavi, expansi ad 3—3.5 cm longi. Sepala lateralis 2, ovata, in textura membranacea, hyalina, 6 mm longa, c. 3 mm lata, apice rostellata, recurvata costa dorso incrassata, anguste alata. Vexillum cucullatum, ellipticum, 12—13 mm longum, 6 mm latum, rubro-purpureo-maculatum, costa dorso incrassata, late cristata, apice cuspidata. Alae stipitatae, 33 mm longae, 14 mm latae, bilobatae; lobus basalis falcatus, recurvatus, rubro-purpureo-maculatus, distalis subrotundato-obovatus, apice rotundatus, dorso auricula angusta, reflexa. Labellum infundibulare, ore subhorizontale, 15 mm latum,

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antice acuto, basi in calcar 3.5—4 cm longum, apice bifidum sensim angustatum, maculatum. Filamenta linearia, c. 5 mm longa; antherae ovoidea, apice obtusae. Ovarium fusiforme, erectum, c. 5 mm longum, acuminatum. Capsula lineari-cylindica, ad 3 cm longa, rostrata, polysperma. Semina oblonga, c. 3 mm longa, fusca, unicostata, glabra.

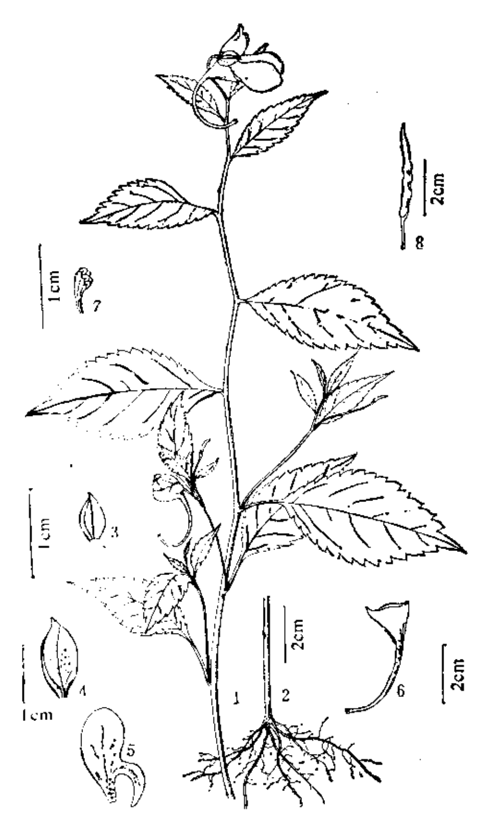


图 1　木里凤仙花 *Impatiens muliensis*　1—2. 植株 plant; 3. 侧生萼片 lateral sepal; 4. 旗瓣 standard; 5. 翼瓣 wing; 6. 唇瓣 lip; 7. 花丝及花药 filaments & anthers; 8. 蒴果 capsul。（张泰莉绘 drawn by Zhang Tai-li）

Sichuan（四川）: Muli（木里）, ad marginem rivuli, in aprico herboso alt. 3500 m, 1987. 09.09., Zhao Qin-shen et Mou Ke-hua（赵清盛、牟克华）8479（Typus, PE）。

一年生草本，高 30—50cm，无毛。茎肉质，直立，不分枝或稀上部有分枝，下部节膨大，有多数纤维状根。叶互生，下部和中部茎叶具柄；叶片膜质，卵形或卵状披针形，长 3—7cm，宽 1.5—3cm，顶端短尾尖，基部楔形，边缘具粗齿，齿端具小尖，上面深绿色，下面淡绿色，两面无毛，侧脉 3—5 对，弧状弯曲；叶柄细，长 1.5—3cm。总花梗单生于上部叶腋，常短于叶，通常具花 2，稀单花；花梗长 5—10mm，花后略伸长，近花下端有 1 苞片；苞片绿色，卵形，长 1.5—2mm，顶端尖而外弯，具 3 脉，宿存。花淡黄色，大，径达 3—3.5cm；侧生萼片 2，卵形，质薄而透明，长 6 mm，宽约 3mm，顶端具短喙尖，稍外弯，背面中肋增厚，具窄翅。旗瓣兜状，椭圆形，长 12—13mm，宽 6mm，具紫红色斑点；背面中肋有宽鸡冠状突起，顶端具小尖；翼瓣具柄，长 30mm，宽 14mm，二裂，基部裂片镰刀状，下弯且外展，有紫红色斑点，上部裂片近圆倒卵形，顶端圆形，背部有狭而反折的小耳；唇瓣漏斗状，长 3.5—4cm，口部近平展，宽 15 mm，先端尖，向基部渐狭成二浅裂的距，有斑点。花丝线形，长约 5mm，花药卵圆形，钝。子房纺锤状，直立，长约 5mm，渐尖，具 5 细齿裂。蒴果线状圆柱形，长达 3cm，顶端喙尖。种子多数，长圆形，长约 3mm 黄褐色，无毛，具 1 肋。

体态近似川北凤仙花 *I. notolopha* Maxim.，花 1—2，薄质而透明，萼片背面中肋具狭翅；旗瓣及翼瓣基部裂片有紫红色斑点；翼瓣基部裂片镰刀状，下弯而外展，与后者明显区别。

2. **横断山凤仙花**　新种　图 2

Impatiens hengduanensis Y.L. Chen, sp. nov.

Species haec habitu *I. xanthocephalae* Comber similis, sed planta pedunculisque flavo-brunneo-pilosis, sepalis lateralibus, 4, exterioribus 2, ovato-lanceolatis, eis interioribus 2 minutis;

labello et vexillo puberulo; foliis utrinque secus nervos hispidulis facile differt.

Herba annua, 5—15 cm alta. Caulis tenuis, eredtus, simplex vel rarius superne ramosus, dense flavo-brunneo-pilosus. Folia alterna, petiolata; lamina membranacea, ovata vel oblongo-ovata, 2—3.5 cm longa, 1—1.5 cm lata, apice breviter acuta, basi cuneata, basim versus glandulis 1—2-paribus, margine crenatoserrata, supra intense viridia sparce scabrida, subtus pallida secus nervos brunneo-pilosa; nervis lateralibus 3—5(6)-paribus, arcuatis; petioli tenues, 5—10 mm longi, flavo-brunneo-pilosi. pedunculi graciles in axillis foliorum solitarii, foliis aequilongi vel leviter longiores, uniflori; pedicelli tenues, 6—10 mm longi, sparse puberuli, basi 1-bracteati, bracteae ovato-lanceolatae, 1—2 mm longae, persistentes. Flores parvi, aurantiaci, expansi ad 1.5 cm longi. Sepala lateralia 4, exteriora 2, ovato-lanceolata, c. 3 mm longa, 1 mm lata, apice curvato-cuspidata, 3-nervia, dorso ad nervos sparse puberula, interiora 2, minuta, linearilanceolata, hyalina, 1.5 mm longa, 0.5 mm lata. Vexillum ellipticum, cucullatum, c. 5mm longum, 4—5 mm latum, apice rotundatum; costa dorso non incrassata, puberula. Alae stipitatae, 12 mm longae, bilobatae; lobus basalis ovato-oblongus, acuminatus, lobus distalis dolabriformis, apice obtusus dorso auricula angustata, reflexa. Labellum anguste infundibulare 10—15 mm longum, ore obliguo, c. 7 mm latum, antice acuto, basi in calcar incurvum vel involutum sensim attenuatum. Filamenta linearia, 3 mm longa; antherae ovoidea, apice obtusae. Ovarium fusiforme, erectum, 2.2 mm longum, breviter rostellatum. Capsula (immatura) fusiformis, 4—5 mm longa.

Yunnan (云南): Gonshan (贡山), alt. 1400—1500 m, ad marginem sylvae sempervirentis,in declivio, 1982.08.22. Qing-Zang Exped. (青藏队) 82—9448 (Typus,PE).

一年生草本，高 10—15cm。茎纤细，直立，不分枝，或稀上部分枝，被黄褐色短柔毛。叶互生，具柄；叶片膜质，卵形或长圆状卵形，长 2—3.5cm，宽 1—1.5cm，顶端短尖，基部楔形，向基部有 1—2 对腺体，边缘具圆齿状锯齿，上面深绿色，被疏短糙毛，下面淡绿色，沿脉被褐色短毛；侧脉 3—5(6)对，弧状弯曲；叶柄细，长 5—10mm，被黄褐色短柔毛。总花梗纤细，单生于上部叶腋，与叶等长或稍长于叶，具 1 花；花梗细，长 6—10mm，被疏微毛，基部具 1 苞片；苞片卵状披针形，长 1—2mm，宿存。花小，金黄色，径长 1.5cm。侧生萼片 4，外层 2 枚卵状披针形，长约 3mm，宽 1mm，顶端具内弯小尖，具 3 条脉，内层 2 梗极小，线状披针形，透明，长 1.5mm，宽约 0.5mm。旗瓣椭圆形，兜状，长约 5mm，宽 4—5mm，顶端圆形，背面中肋不增厚，被微毛。翼瓣具柄，长 12mm，二裂；基部裂片卵状长圆形，渐尖，上部裂片斧形，顶端钝，背部有狭反折的小耳。唇瓣狭漏斗状，长 10—15mm，口部斜上，宽约 7mm，先端尖，基部渐狭成上弯或卷曲的距。花丝线形，长 3mm；花药卵圆形，顶端钝。子房纺锤形，直立，长 2.2mm，短喙尖。蒴果(未成熟)纺锤形，长 4—5mm。

本种外形近似黄头凤仙花 *I. xanthocephala* Comber，但植株和总花梗均被黄褐色短柔毛；外层萼片卵状披针形，内层萼片极小，线状披针形；唇瓣和旗瓣背面被微毛，无斑点；叶两面沿脉被短糙毛，与后者容易识别。

3. **察隅紫菀**　新种　图 3

Aster zayuensis Y. L. Chen, sp. nov.

Species haec habitu similis *A. fulgiduli* Griers. qui foliis ovatis, margine integris, supra glabris, subtus in venis minoribus fulgidulis; flosculis radii c. 16; phyllariis dorso viscido-glandulosis distinguitur. Affinis *A. albescenti* (DC.) Hand.-Mazz. qui foliis integris vel den-

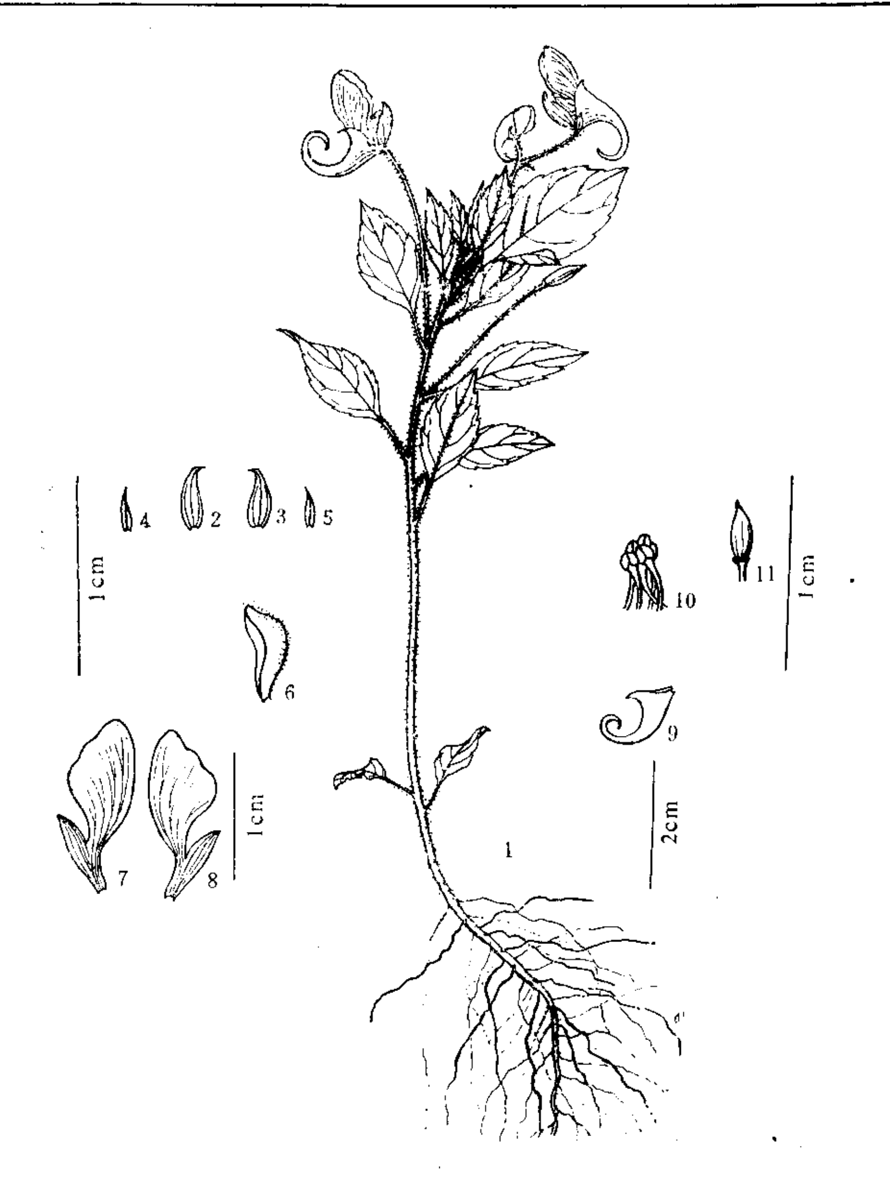


图 2 横断山凤仙花 *Impatiens hengduanensis* 1. 植株 plant; 2—3. 外层萼片 outer sepals; 4—5. 内层萼片 inner sepals; 6. 旗瓣 standard; 7—8. 翼瓣 wings; 9. 唇瓣 lip; 10. 花丝及花药 filaments & anthers; 11. 子房 ovary。

(张泰莉绘 Drawn by Zhang Tai-li)

ticulatis, supra pilosulis vel glabris, subtus albo-vel cinereo-araneosis vel tomentosis; flosculis radii 15—30; lingulis saepe albis facile differt.

Frutex. 1—1.5 m alti Radix ignota. Ramuli cylidrici, brunnei, dense pubescentes pilis glandulosis conspersis, mixtis tecti. Folia caulina petiolata, oblonga vel oblongoelliptica, 10—15 cm longa, 3.5—5 cm lata, apice acuta, basi late cuneata vel subrotundata, margine grosse serrata, ad basim subintegra, penninervia, nervis lateralibus 9—11-paribus, venis reticulatis, supra sparse hispidula, glandulis intermixtis obsita, subtus adpresse hispidula et glandulosa, nervis medianis conspicue prominentibus; petiolis robustis c. 5 mm longis. Capitula numerosa in corymbum terminalem disposita; pedicelli tenues, 5—10 mm longi, bracteolis 2—3, lineari-

subulatis, dense pubescentibus et glandulosis. Involucrum cylindrico-campanulatum 3—5 mm longum, 5—6 mm latum; phyllaria involucri 3—4-seriata, imbricata, coriacea, externa lanceolata, 1—1.5 mm longa, media ovato-lanceolata, 2—2.5 mm longa, interiora lineari-oblonga, acuminata, margine scariosa, dorso et apice brunnea, puberula et glandulosa. Flores radii 7—8, ligulati, tubis 3—3.5 mm longis, ligulis luteis, oblongis, c. 3.5 mm longis, 1.5 mm latis, apice 2—3-denticulatis, 4-nervulis. Flores disci tubulati, lutei, c. 5 mm longi, tubis 1.5—1.8 mm longis, lobis ovato-triangulatis, c. 1 mm longis, puberulis. Appendices stylorum triangulares, papillosae. Achaenia cylindrica, 1—1.2 mm longa, sericea. Pappus sordidus uniseriatus, 5—6 mm longus.

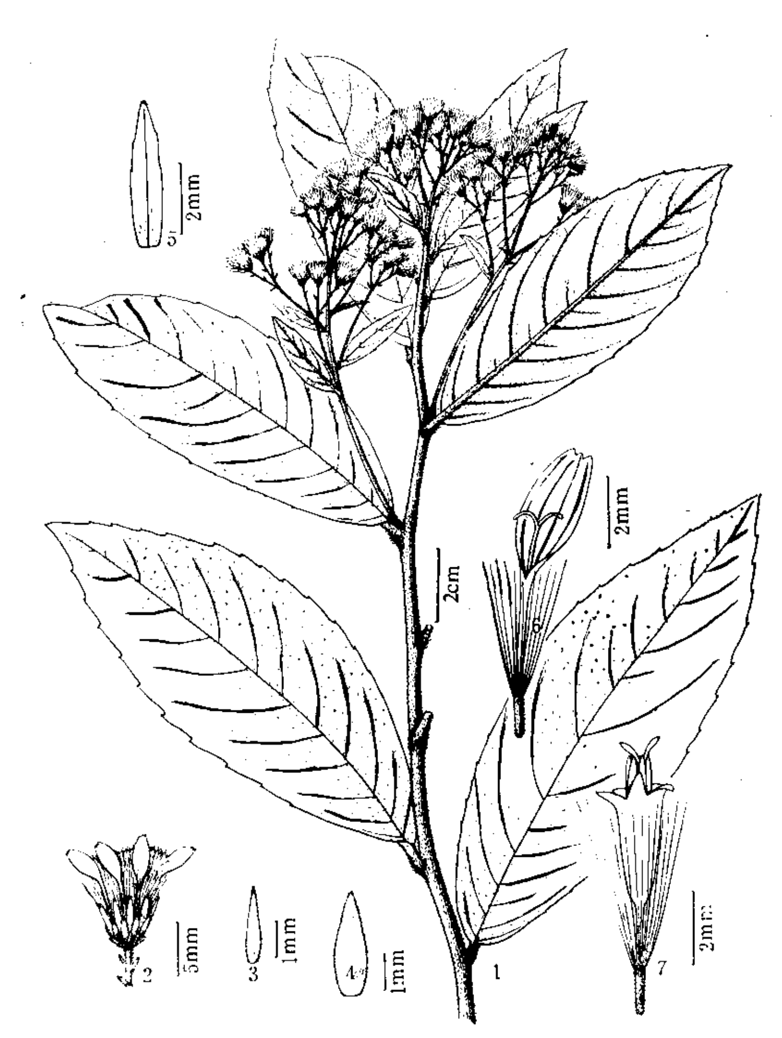


图3 察隅紫菀 *Aster zayuensis* 1. 花枝 flowering branch; 2. 头状花序 capitulum; 3—5. 外、中、内层总苞片 outer, median and inner phyllaries, 6. 舌状花 ray-floret; 7. 管状花 disc-floret。 (吴彰桦绘 Drawn by Wu Zhang-hua)

Xizang (西藏): Zayü (察隅), Alt. 1500m, in prato fruticoso, in valle, 1980. 07.09, Ni Zhi-cheng et Wang Yong-ze(倪志诚,汪永泽) 570 (Typus, PE).

灌木，根未见。茎高 1—1.5m；小枝圆柱形，褐色，被黄褐色柔毛，杂有腺毛。基

部叶末见;茎叶具柄,长圆形或长圆状椭圆形,长10—15cm,宽3.5—5cm,顶端急尖,基部宽楔形或近圆形,边缘具粗锯齿,基部近全缘,羽状脉,侧脉9—11对,网脉明显,上面被疏短糙毛,杂有腺点,下面被贴生短伏毛和腺点;中脉明显突起;叶柄粗壮,长约5mm。头状花序多数,排成顶生伞房花序;花序梗细,长5—10mm,具2—3个线状钻形小苞片,被密柔毛和腺点;总苞钟状,长3—5mm,宽5—6mm;总苞片3—4层,覆瓦状,革质,外层披针形,长1—1.5mm,中层卵状披针形,长2—2.5mm,内层线状长圆形,顶端渐尖,边缘干膜质,外面及顶端被短柔毛和腺点,褐色。边缘小花7—8,舌状,管部长3—3.5mm;舌片黄色,长圆形,长约3.5mm,宽1.5mm,顶端具2—3小齿,具4条脉;管状花多数,黄色,长约5mm,管部长1.5—1.8mm,裂片卵状三角形,长约1mm,被微毛;花柱分枝附器三角形,被乳头状毛。瘦果圆柱形,长1—1.2mm,被绢毛;冠毛污白色,1层,长5—6mm。花果期7月。

本种外貌酷似辉叶紫菀 *Aster fulgidulis* Griers.,后者茎叶卵圆形,全缘,上面无毛,下面在细网脉间有光泽;头状花序有16个舌状花;总苞片背面具粘质腺毛,而与本种不同。也似小舌紫菀 *A. albescens* (DC.) Hand.-Mazz.,但后者叶全缘或有浅齿,上面被短柔毛或近无毛,下面被白色或灰白色蛛丝状毛或绒毛;舌状花15—30个;舌片常白色,与本种容易区别。

4. **巴塘香青** 新种 图4

Anaphalis batangensis Y.L. Chen, sp. nov.

Certe affinis *A. nepalensi* (Spreng) Hand.-Mazz., sed foliis caulinis dense dispositis, linearibus vel linearilanceolatis, calathidia saepe superantibus, apice non longe sphacellatis; calathidis minoribus; involucro 5—8 mm diam. phyllariis sub anthesi epatentibus valde diversa.

Herba perennis. Rhizoma gracile elongatum, adscendens vel repens, hypophyllis squamas fuscas et rosulas foliorum edens. Caules e basi geniculata erecti, 15—25 cm alti, simplices, cineroaraneoso-lanati, saepe dense foliati. Folia rosuslaria et basilaria spathulato-oblanceolata, 1.5—2.5 cm longa, 0.2—0.4 cm lata, basi in petiolum alatum sensim angustata, apice acuta, mucronulata, caulina media erecta, basi sensim angustata, breviter amplexicaulia non decurrentia, apice acuta, superiora calathidia saepe superantia, omnia utrinque albo-lanata, uninervia. Calathidia 3—6, ad apicem caulis in corymbum terminalem conferta Involucrum campanulato-sphaericum, 6—8 mm longum, 5—8 mm latum, disco longiorum; phyllaria 7—8-seriata imbricata, alba, sub anthesi non patentia vel leviter patentia, extima ovato-lanceolata 3—5 mm longa, brunnescentia vel atro-brunnea, interiora oblongo-lanceolata, 6—7 mm longa, 2—3 mm lata, acuta, basi brunnescentia, intima lineari-lanceolata, 5—6 mm longa, unguibus longis. Receptaculum fimbrilliferum. Flores in calathio heterogami exteriores foeminei multiseriati, interiores masculini 4—6. Corollae c. 3 mm longae, in fl. foemines filiformes, in masculae superne infundibuliformes. Pappi setae albae corollis vix longiores, filiformes subtiliter denticulatae. Achainia cylindrica, c. 1 mm longa, glabra. Planta masculina non visa.

Sichuan (四川): Batang (巴塘), Haizhishan (海子山), ad marginem sylvae, Piceae, alt. 4000—4200m, 1983. 07.29 Lang Kai-yong et Li Liang-qin (郎楷永, 李良千) 2477 (Typus, PE).

多年生草本,根状茎细长,斜升或平卧,颈部有褐色鳞片状叶和莲座状叶丛。茎从膝曲的基部直立,高15—25cm,不分枝,被灰白色蛛丝状棉毛,常有较密的叶。莲座状叶与

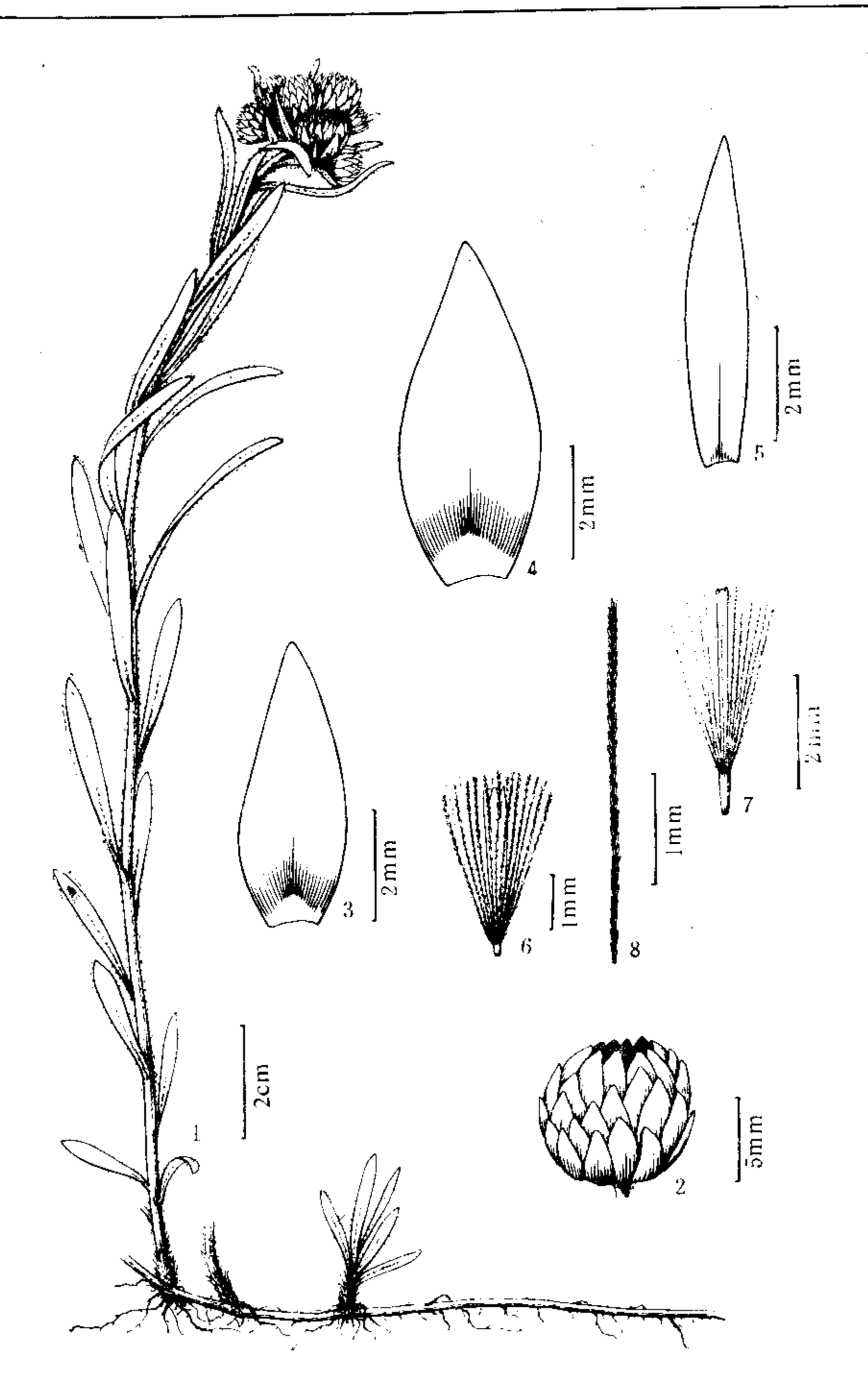


图4　巴塘香青 *Anaphalis batangensis*　1. 植株 plant;　2. 头状花序 capitulum;　3—5. 外、中、内层总苞片 outer, median and inner phyllaries;　6. 雄花 male floret;　7. 雌花 female floret;　8. 冠毛 pappus。　(吴彰桦绘 Drawn by Wu Zhang-hua)

基生叶匙状倒披针形，长 1.5—2.5cm，宽 0.2—0.4cm，基部渐狭成具翅的柄，顶端急尖而有小尖头；中部茎叶直立，线形或线状披针形，长 2—4cm宽 0.2—0.4cm，基部渐狭，稍抱茎而不下延，顶端急尖，上部叶渐小，常超出头状花序，全部叶两面被白色棉毛，具 1 脉。头状

花序 3—6 个，在茎端密集成伞房花序，无花序梗。总苞钟状圆球形，长 6—8cm，宽 5—8 mm，长于花盘；总苞片 7—8 层，覆瓦状，白色，在花期不开展或略开展，外层卵状披针形，长 3—5mm，褐色或基部深褐色，中层长圆状披针形，长 6—7mm，宽 2—3mm，顶端尖，基部褐色，最内层线状披针形，长 5—6mm，具长爪部。花托流苏状。雌株头状花序异形，外围有多层雌花，中央有 4—6 个雄花；花冠长约 3mm，雌花丝状；雄花上部漏斗状。冠毛白色，长于花冠，丝状而有微锯齿。瘦果圆柱形，长约 1mm，无毛。雄株未见。

本种近似尼泊尔香青 *Anaphalis nepalensis* (Spreng) Hand.-Mazz.，但茎叶密集，线形或线状披针形，上部茎叶常超出头状花序，顶端无长细尖头；头状花序较小；总苞直径 5—8mm；总苞片在花期不开展，与后者容易区别。